

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method for sequentially laminating and mounting a plurality of semiconductor chips each having an electrode surface, comprising the steps of:

activating the electrode surfaces of the semiconductor chips which are arranged in opposition to each other;

positioning the semiconductor chips;

laminating and bonding the semiconductor chips by pressing such that a reaction layer is not formed or formation of the reaction layer is suppressed ~~excessively~~; and

entirely heating the semiconductor chips so as to form the reaction layer after lamination and bonding of all the semiconductor chips are completed.

2. (original) A method as claimed in claim 1, wherein: supersonic wave is applied in addition to the pressing in the laminating and bonding step.

3. (original) A method as claimed in claim 1, wherein: a bump is formed on the semiconductor chip, and the electrode surface includes solder formed on the bump.

4. (original) A method as claimed in claim 1, wherein:
a bump is formed on the semiconductor chip, and
the electrode surface includes solder containing an
active component formed by electroless plating.
5. (original) A method as claimed in claim 1, wherein:
the reaction layer comprises a bonding layer made of
solder.
6. (original) A method as claimed in claim 1, wherein:
the reaction layer is uniformly formed between the
semiconductor chips.
7. (original) A method as claimed in claim 1, wherein:
the activating step is carried out in order to remove
an organic substance on the electrode surface.
8. (original) A method as claimed in claim 1, wherein:
the pressing step is carried out such that the bonding
is performed via interatomic force by approaching the activated
electrode surface to an interatomic distance.
9. (original) A method as claimed in claim 1, wherein:
the activating step is carried out by an atomic beam of
inactive gas excited by plasma.
10. (original) A method as claimed in claim 1, wherein:
the activating step is carried out by irradiating
radical fluorine.
11. (original) A method as claimed in claim 1, wherein:

the activating step is carried out by sputtering.

12. (original) A method as claimed in claim 1, wherein:
the activating step is carried out by thermally
processing in reduction gas.

13. (new) The method as claimed in claim 1, wherein the
electrode surface of each of said plural semiconductor chips is
vertically aligned with one another.

14. (new) A method of mounting plural substantially
identical semiconductor chips, comprising the steps of:

placing solder on each opposing bump of adjacent
semiconductor chips;

activating a surface of the solder;

directly contacting at least two opposing bumps of said
adjacent semiconductor chips with each other;

pressing said adjacent semiconductor chips together to
bond them without heating; and

then heating said plural semiconductor chips after all
of the plural semiconductor chips to be heated have been pressed
together.

15. (new) The method as claimed in claim 14, wherein
said activating step comprises irradiating an atomic beam excited
by plasma.

16. (new) The method as claimed in claim 14, wherein
said pressing step comprises bonding by interatomic force.

17. (new) The method as claimed in claim 14, wherein said activating step and said pressing step are performed in a reduction atmosphere.

18. (new) The method as claimed in claim 14, wherein said placing solder step comprises electroless plating said bumps.

19. (new) A method of mounting plural substantially identical semiconductor chips, comprising the steps of:

activating a surface of plural metal bumps on said semiconductor chips;

directly contacting at least two opposing bumps of said adjacent semiconductor chips with each other;

pressing said adjacent semiconductor chips together to bond them without heating; and

then heating said plural semiconductor chips after all of the plural semiconductor chips to be heated have been pressed together.

20. (new) The method as claimed in claim 19, wherein the plural metal bumps are one of copper, gold and aluminum.